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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,386	04/30/2004	Ramesh NAGARAJAN	118447	3385
27074 7590 06/12/2007 OLIFF & BERRIDGE, PLC. P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER MOTSINGER, SEAN T	
			ART UNIT 2624	PAPER NUMBER
			NOTIFICATION DATE 06/12/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction27074@oliff.com
jarmstrong@oliff.com

Office Action Summary	Application No. 10/709,386	Applicant(s) NAGARAJAN ET AL.	
	Examiner Sean Motsinger	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 and 15-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-11 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/10/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Applicants Arguments/Amendment

Applicants response to the restriction on 5/18/2007 has been made of record. Applicant has elected species II including claims 1-4, and 9-14 with traverse, claims 5-8 and 15-20 have been withdrawn from consideration. Claims 1-4 and 9-14 are treated on the merits below.

Regarding applicants traversal, Applicant has argued that there would not be a burden to examine the two separate species. Examiner disagrees for the following reasons:

Prior art applicable to one species would not likely be applicable to the other, and the species require performing different search queries. Therefore the election/restriction is hereby made **FINAL**.

Objections to the Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "Plurality of planes" claimed in claim 2 and claim 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

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is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Rejections Under 35 U.S.C. 112 1st Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4 and 9-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Re claim 1 and 9 claims 1 and 9 contain the language "segmenting gray scale image data into a first plane having high spatial frequency gray scale image data and a second plane having low spatial frequency gray scale image data" This element was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The application describes splitting the pixels of image into two planes a low spatial frequency "background" plane and a high spatial frequency "selector" image. First the use of "selector plane" this manner is inconsistent with the relevant prior art related to this application (see use of selector plane in Fan et al. US 6,400,844 and MacLeod et al US 5,778,092.) Furthermore the specification describes the selector plane as containing grey level pixels not binary pixels. Yet the specification describes using binary compression techniques (CCITT G3/G4 or JBIG2) to compress the grey scale data.

One of ordinary skill in the art would not know how to use binary compression techniques to compress grayscale image data, and would further would not understand what exactly applicants selector plane.

Re Claims 2-4 and 10-14, these claims are rejected because they depend from claim 1 and have the same issues as above.

Re Claim 2 and 10, Claims 2 and 10 contains language wherein segmenting gray scale image data includes segmenting the high spatial frequency gray scale image data into a plurality of planes based on gray scale levels of the high spatial frequency gray scale

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image data. Yet this is only mentioned in passing in paragraph 51 of the specification and is not described clearly in the specification. Therefore would not be clear to one of ordinary skill in the art how to use or implement this feature nor is it described what the purpose of this feature is in the specification.

Rejections Under 35 U.S.C. 112 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, and 9-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claims 1-4 and 9-14 These claim are unclear for the same reasons stated above in the rejections under 35 U.S.C. 112 1st paragraph above. Examiner has applied the closest relevant art to the invention as best understood.

Rejections Under 35 U.S.C. 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 4 is rejected under 35 U.S.C. 101 because the Claimed invention is directed to non-statutory subject matter. Claim 4 defines a transmission medium with descriptive material, while "functional descriptive material" may be claimed as a statutory product when embodied on a tangible computer readable medium, a transmission medium embodying that same functional descriptive material is neither a process nor a product and therefore does not fall within one of the four statutory classes of 35 U.S.C. 101. Examiner suggests using the language "A computer readable medium storing a computer program..." to avoid 35 U.S.C. 101 issues.

Rejections Under 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844.

Re claim 1 Noh et al discloses A method for reformatting binary image data (bi-level dithered image column 2 lines 25), comprising: converting binary image data into grayscale image data (undither to create "multi-level image");

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Noh does not disclose segmenting gray scale image data into a first plane having high spatial frequency gray scale image data and a second plane having low spatial frequency gray scale image data; and separately compressing the high spatial frequency gray scale image data in the first plane and the low spatial frequency gray scale image data in the second plane.

Fan et al discloses segmenting gray scale image data into a first plane (upper plane column 5 lines 5-15) having high spatial frequency gray scale image data (dark sides of edges see abstract) and a second plane (lower plane column 5 lines 5-15) having low spatial frequency gray scale image data (smooth portions see abstract); and separately compressing (column 5 lines 24-30 note each can be compressed differently) the high spatial frequency gray scale image data in the first plane and the low spatial frequency gray scale image data in the second plane.

Re claim 9, claim 9 is claimed as any apparatus configured to perform the method of claim 1 (see rejection for claim 1.)

Claims 4, and 12-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844.

Re claim 4 Noh and Fan disclose all of the elements of claim 1, they do not disclose a computer readable medium or a modulated signal being encoded to perform the method of claim 1. However examiner is take official notice that it is well known to implement

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such methods in computer code and store them on a computer readable medium. The advantage would be to be able to transfer the program. Therefore it would have been obvious to one of ordinary skill in the art to combine Noh, Fan and common knowledge in the art to reach the aforementioned advantage.

Re claim 12 Noh and fan disclose all of the elements of claim 9 the do not disclose a marking device incorporating the apparatus of claim 9. However examiner is taking a official notice that marking devices are notoriously well known. The advantage to combine would to improve the marking device such that "economies in the resources used to store and transmit image data can be achieved by compression"

Re claim 13 Noh and fan disclose all of the elements of claim 9 the do not disclose a photocopier incorporating the apparatus of claim 9. However examiner is taking a official notice that photocopiers are notoriously well known. The advantage to combine would to improve the photocopier such that "economies in the resources used to store and transmit image data can be achieved by compression"

Re claim 14 Noh and fan disclose all of the elements of claim 9 the do not disclose a document scanner incorporating the apparatus of claim 9. However examiner is taking a official notice that document scanners are notoriously well known. The advantage to combine would to improve the document scanner such that "economies in the resources used to store and transmit image data can be achieved by compression"

Claims 2, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844 in further view of Lin et al US 2002/0076103

Re claim 2 Fan and Noh disclose all the elements of claim 1 they do not disclose wherein segmenting gray scale image data includes segmenting the high spatial frequency gray scale image data into a plurality of planes based on gray scale levels of the high spatial frequency gray scale image data.

Lin discloses wherein segmenting gray scale image data includes segmenting the high spatial frequency gray scale image data into a plurality of planes based on gray scale levels of the high spatial frequency gray scale image data (see paragraph 67 note the image is further segmented into partial planes.) The motivation to combine is so that the objections can be "readily extracted" (see paragraph 67). Therefore it would have been obvious to one of ordinary skill at the time of the invention to combine Fan Noh and Lin to reach the aforementioned advantage.

Re claim 10, claim 10 is claimed as any apparatus configured to perform the method of claim 2 (see rejection for claim 2.)

Claims 3, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noh US 5917952 in view of Fan et al US 6400,844 in further view of Kodidis, Eleftherios et

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al. "Nonlinear Adaptive Filters For Speckle Suppression in Ultrasonic Images," Signal Processing, Signal Processing v 52 n3 August 1996, pp. 357-372.

Re claim 3 Noh and Fan disclose all of the elements of claim 1 they do not disclose enhancing the low spatial frequency gray scale image data in the second plane. Kodidis discloses a method of speckle reduction (See abstract, which is a method for enhancing low spatial frequency data). The motivation to combine is to suppress speckle (see abstract).

Re claim 11, claim 11 is claimed as any apparatus configured to perform the method of claim 3 (see rejection for claim 3.)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Motsinger whose telephone number is 571-270-1237. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571)272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Motsinger
6/4/2007


JINGGE WU
SUPERVISORY PATENT EXAMINER